FACT SHEET FOR NPDES PERMIT NO. WA0023817
CITY OF OCEAN SHORES WWTP

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits (Chapter 173-220 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION

Applicant:	City of Ocean Shores
Facility Name and Address:	Ocean Shores Wastewater Treatment Plant (Southern Tip of Point Brown, Ocean Shores Blvd.) P.O. Box 909 Ocean Shores, WA 98569
Type of Treatment:	Aerated Lagoon (Existing) Activated Sludge (Final)
Discharge Location:	Grays Harbor Estuary (at entrance to harbor, north side) Latitude: 46 ° 55' 46" N. Longitude: 124° 09' 25" W.
Water Body ID Number:	WA-22-0020

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

The history of Ocean Shores wastewater system begins with the founding of Ocean Shores in 1960. The City was originally founded as a resort and retirement community with significant expected immediate growth. However, growth in Ocean Shores was much less rapid than expected, and much of the City has little development and no public sewer system.

The City has experienced growth since the beginning of development in 1960 attributable to its popularity as a recreational and vacation area. Population increased over 80 percent from 1970 through 1978 (9.6 percent per year). From 1980 to 1987, the population growth slowed considerably with an increase of about 1.2 percent per year (2,073). Ocean Shores has a high proportion of summer and recreational homes and a low proportion of permanently occupied homes. The permanent plus seasonal population in 1995 was about 3,625 (Ocean Shores, Illahee and Oyehut). Including the school, motels, and transient, the population is approximately 4,516 in the winter and 12,678 in the summer.

The communities of Hogan's Corners, Ocean City State Park, Oyehut, and Illahee are presently not sewered; however, these areas will be connected to Ocean Shores system in the near future.

In the summer of 1967, the Grays Harbor County Health Department stated that drainfield disposal of septic tank effluents would no longer be allowed for commercial establishments in Ocean Shores. In 1968, Grays Harbor County Public Works Department developed a comprehensive wastewater plan. This plan was approved by the Department of Ecology (Department) and, in 1971, construction of the wastewater collection and treatment system began. In November 1970, the residents approved incorporation of the City of Ocean Shores. On July 29, 1974, the Department issued the NPDES permit to Grays Harbor County for the new wastewater treatment plant.

In 1978, the operation and maintenance of the wastewater collection and treatment facilities was turned over to the City. However, in 1986 Grays Harbor County observed high levels of bacterial contamination and nutrients in the drainage ways, canals, and lakes that was attributed to failed septic systems.

In 1990, about 90 percent of the residences in the City relied on septic tanks and drainfields for sewage disposal. The remaining 10 percent of the residencies and all the businesses and motels are served by a conventional gravity sewer system and a two-cell aerated lagoon treatment plant.

In 1993, the City developed a Wastewater Master Development (WMD) Plan to supplement the 1990 General Sewer Plan. The WMD plan was developed to identify the cost of replacement of all septic systems with sewers and construction of a new treatment plant. In 1996, the City submitted an engineering report to the Department for review and approval that identified the selected alternative for wastewater collection and treatment as vacuum sewers and an oxidation ditch. The plans and specifications for the construction of the new facility was approved on March 13, 1998. The bids for the new construction were open on April 15, 1998, and awarded to Imco Construction of Bellingham. The schedule for completion of construction is July 1999. See Appendix C for map and location of City and WWTP.

COLLECTION SYSTEM STATUS

In 1971, the construction of the proposed first stage wastewater collection system facilities recommended by the 1968 comprehensive sewerage plan began. In 1980, a General Sewer Plan was prepared which established a layout for conventional sewers throughout the City. The collection system has been extended many times since 1971 to add new commercial and residential areas and to correct failing septic

systems and poorly constructed private systems outside the city limits. The improvements to date consisted of approximately 38,065 feet of 6 to 27-inch gravity sewer, 35,300 feet of 8 to 16-inch pressure main, and two pump stations.

The existing pump stations are equipped with high/low level alarms, pump level alarms, a telemetry system that transmits alarms to the police station during off-hours, and a trailer mounted standby power generator. There are no overflow pipes and no known overflows in the collection system.

In 1996, the City submitted an engineering report to the Department for review and approval that identified the selected alternative for wastewater collection as vacuum sewers. In July 1995, the City expanded the collection system using vacuum sewers in the North End Sewer District. The City's plan use vacuum sewers to connect most of the existing residential and commercial areas in Ocean Shores to the treatment plant by the end of 1999.

TREATMENT PROCESSES

In 1971, the construction of the proposed first stage wastewater treatment facilities recommended by the 1968 comprehensive sewerage plan began. The Ocean Shores Wastewater Treatment Plant is an aerated lagoon system consisting of two aerated lagoons and a storage lagoon. Cell one has two 10-hp aerators and two directional floating aerators. The second cell has two floating aerators; 7½ hp and 10 hp. A Parshall flume that measures total plat flows follows the second cell. The plant originally was designed to provide primary treatment of a summer weekend flow of 6.7 MGD with the storage lagoon designed to allow effluent discharge during outgoing tides only. An analysis of the treatment capacity of the lagoon system was completed in 1991. The analysis conservatively estimated the flow capacity at 270,000 gallons per day (gpd). Since all flows are pumped to this facility, accurate measurement of influent flows is difficult. Therefore, actual peak daily flows are not recorded. The plant presently provides secondary treatment of daily average flows up to 240,000 gpd. The facility has not only reached its design life but also its treatment capacity as well.

The existing two treatment lagoons can be operated either in series or in parallel. Currently the two treatment lagoons are operated in series as facultative aerated lagoons with some hydraulic short-circuiting deficiencies. Only one aerator is operating in each treatment lagoon and oxygen transfer is not uniform.

The treatment plant is constructed on a man-made elevated plateau to protect the facilities from storm tides and wave damage. The treatment plant site includes about ten acres reserved for expansion of facilities.

In 1996, the City submitted an engineering report to the Department for review and approval that identified the selected alternative for wastewater treatment as an oxidation ditch with UV disinfection and biosolids composting. The engineering report was approved by the Department on July 1, 1997. An engineering report amendment for the outfall study and design was approved on January 23, 1998. The new facility will be designed to serve the entire City and adjacent areas outside city limits with an average maximum monthly flow of 1.96 MGD (summer).

The plans and specifications for the new facility were approved on March 13, 1998. The bids for construction were open on the April 15, 1998, and awarded to Imco (Bellingham) on April 27 with a completion date in July 1999.

The new facility will consists of the following:

- Headworks with flow measurement, mechanically cleaned screens (2 units), manually cleaned screen (1 unit);

- Primary treatment with ultra-fine screens (3 units), screenings and grit screw conveyor with spray washer (2 units), receiving storage and transport box (2 units);
- Secondary treatment with three stage anoxic selector, oxidation ditch, secondary clarifiers (3 units);
- Storage lagoon with control valve for discharge on out-going tides;
- Disinfection with ultra-violet irradiation (2 units);
- Emergency generator; and
- Sludge treatment and disposal with aerated sludge storage, filter press dewatering, and extended aerated static pile composting process.

The new wastewater treatment plant is classified as a Class II facility and requires an Operator with a Group II certification. The facility is staffed eight hours per day during the week, operators are on-call weekends for emergencies, and to take required samples. All alarms at the plant are handled through an auto dialer system that calls from a list and schedule of on-call staff that is to be notified in case of emergency.

ULTRAVIOLET DISINFECTION SYSTEM

UV disinfection is a physical process that uses electromagnetic energy to prevent cells from further reproduction. UV disinfection systems consist of UV lamps within a reactor, electronic ballast, power distribution centers, system controls, and a lamp cleaning rack.

UV light at a wavelength of 253.7 nanometers (nm) has the optimum germicidal effect. For wastewater disinfection, mercury vapor lamps are used to provide the desired wavelength. These lamps are inserted into quartz sleeves and then placed into wastewater. The quartz sleeves prevent scale from building up on the lamps and also prevent the lamps from being cooled by the wastewater (UV lamps are less efficient at lower temperatures).

UV dosage is measured in units of milliwatt-seconds per square centimeter ($\mu W\text{-sec}/cm^2$) and is a function of light intensity ($\mu W/cm^2$) multiplied by the time (seconds) the organism is exposed. UV detectors mounted near the lamps measure the average UV intensity. **UV Dosage is monitored to determine when UV unit needs maintenance to assure adequate disinfection**. Lamps or banks of lamps can be turned on and off to maintain a target UV dosage at varying flow rates.

The parameters that affect dosage received by the pathogens and, therefore, disinfection performance are:

- UV intensity
- Exposure time (flow rate and hydraulic conditions)
- UV transmittance through the wastewater
- Wastewater suspended solids

UV systems designed to meet 200 fecal coliforms/100 mL will normally produce fecal coliform counts in the range of 5 to 20/100 mL. An option for scheduled lamp cleaning can be based on fecal counts (i.e., when counts approach 100/100 mL, the lamps are cleaned).

The UV control and monitoring system includes the provisions for the following parameters:

- Individual lamp status and alarm
- GFI status for each UV rack with trip alarm

- UV Intensity
- UV intensity low warning

In the event of failure or interruption of operation of the UV control and monitoring system each power distribution center shall operate and provide the designed disinfection performance. The UV control and monitoring system is provided with a display screen and message center that allows complete operator interface. Operator interface is menu driven with automatic fault message windows appearing upon alarm conditions. During times that the facility is not manned (i.e., evenings and weekends), all alarms are telemetered to the on-duty treatment plant staff person.

See Appendix C for layout of treatment facility.

DISCHARGE OUTFALL

Secondary treated and disinfected effluent is discharged from the storage lagoon via 36-inch diameter outfall into the entrance to Grays Harbor estuary. The outfall discharges at a depth of about 20 feet below lower low water and 200 feet offshore from the rock jetty. However, wave action has damaged the outfall and it discharges through an open joint where the pipe emerges from the jetty. The discharge point is about five feet below mean lower low water and is visible at extreme low tides.

An engineering report amendment for the outfall study and design was approved on January 23, 1998. The recommended outfall is an 18-inch diameter pipe that discharges near the shoreline in enough water to cover the outfall end. The 18-inch pipe is installed through the existing 36-inch outfall pipe with an open end and without a diffuser. The effluent from the storage lagoon will be discharged on the outgoing tide. The outfall area is in an area not generally or readily accessible to the public.

RESIDUAL SOLIDS

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), and secondary clarifiers, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum and screenings are drained and disposed of as solid waste at the local landfill. Solids removed from the secondary clarifier are treated (aerated sludge storage and composted) and land applied under a permit from the Grays Harbor County Health District.

PERMIT STATUS

The previous permit for this facility was issued on March 19, 1979, and extended until November 4, 1999. The previous permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD_5), Total Suspended Solids (TSS), pH, and Fecal Coliform bacteria.

An application for permit renewal was submitted to the Department on September 18, 1998, and accepted by the Department on November 17, 1998.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility received its last inspection on October 24, 1996. This was an announced compliance inspection without sampling.

During the history of the previous permit, the Permittee has not remained in compliance, based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. Prior to 1990, the effluent limits for BOD5 was consistently not being met because of a nitrification problem in the lagoons. After an intensive study of the problem, the Department agreed to allow the City to monitor for carbonaceous BOD5 instead of BOD5 in accordance with WAC 173-221-

050(6)(a). However, due to a delay in renew of the existing permit and personnel changes a permit modification in 1990 was delayed. Therefore, this permit will include that change and set interim effluent limitations based on operational controls of the facility and WAC 173-221-050(2)(a).

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the NPDES application and in discharge monitoring reports. The effluent for the year 1997 is characterized as follows:

Table 1: Existing Lagoon Wastewater Characterization

Parameter	Concentration
Average Annual Flow	0.248 MGD
Average for Maximum Month	0.294 MGD
Average Annual $CBOD_5$	17 mg/L
Average Annual TSS	43 mg/L
pH	7.0 to 9.2 units
Chlorine Residual, maximum month	0.57 mg/L
Fecal coliform, maximum month	206 colonies

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

Since the NDPES permit for the City of Ocean Shores contains interim effluent limitations, a schedule for compliance will be necessary for achieving final limits.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the approved engineering report prepared by URS, Inc.(dated June 17, 1997) and are as follows:

Table 2: Design Standards for New WWTP.

Parameter	Design Quantity
Monthly average flow (max. month)	1.960 MGD
Monthly average dry weather flow	1.760 MGD
Monthly average wet weather flow	0.750 MGD
Instantaneous peak flow	4.510 MGD
BOD_5 influent loading	3,700 lb./day
TSS influent loading	3,500 lb./day
Design population equivalent	10,000

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The following technology-based limits for pH, fecal coliform, BOD_5, and TSS are taken from Chapter 173-221 WAC are:

Table 3: Technology-based Limits.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 mL Weekly Geometric Mean = 400 organisms/100 mL
BOD_5 (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L

INTERIM EFFLUENT LIMITATIONS

The interim effluent limits in this permit are based on the operation and maintenance of the existing WWTP. These limits were determined by using the statistical methodology as described in WAC 173-221-030(11), "effluent concentrations consistently achievable through proper operation and

maintenance." The Discharge Monitoring Reports (DMRs) data submitted to the Department for the period January 1996 through December 1997 were used for the analysis. The analysis was then compared to the alternative domestic wastewater facility discharge standards for effluent limitations in WAC 173-221-050(2)(a) and (6)(a). The option of substituting CBOD for BOD in the permit was approved by the Department in 1990 (see letter to City dated May 15, 1990); therefore, this permit will show that change.

The existing permit for this facility was issued in 1974 and did not have a chlorine limit even though the facility utilizes chlorine for disinfection and monitors chlorine residual. The new facility utilizes UV disinfection; therefore, this permit will require monitoring for UV intensity (Mw-sec/cm^2).

The following technology-based mass limits are based on WAC 173-220-130(3)(b) and 173-221-030(11)(b).

Monthly effluent mass loadings (lbs/day) were calculated as the maximum monthly design flow (1.96 MGD) x Concentration limit (30 mg/L) x 8.34 (conversion factor) = mass limit 490 lb./day.

The weekly average effluent mass loading is calculated as 1.5 x monthly loading = 735 lbs/day.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The state was issued 91 numeric water quality criteria for the protection of human health by the U.S. EPA (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDEGRADATION

The state of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the state Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the north side of the entrance to Grays Harbor. WAC 173-201A-140 has designated the receiving water in the vicinity of the outfall as a Class A Marine. Other nearby point source outfalls includes the City of Westport near the south side of the entrance to Grays Harbor. Characteristic uses include the following:

Water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). The Water Quality Criteria for this discharge are summarized below:

Fecal Coliforms	14 organisms/100 mL maximum geometric mean

Dissolved Oxygen	6 mg/L minimum
Temperature	16 degrees Celsius maximum or incremental increases above background
pH	6.0 to 9.0 standard units
Turbidity	less than 5 NTUs above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

The Department is currently monitoring Grays Harbor for fecal coliform and will complete a Total Maximum Daily Load (TMDL) study based on the field sampling. The TMDL Study is scheduled to be completed July 1999. The monitoring includes all point sources; including wastewater treatment plants in the cities of Ocean Shores, Westport, Hoquiam, Aberdeen, and Montesano. All rivers, drainage ditches, storm water outfalls and other known non-point sources were also sampled.

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and is defined as follows:

The maximum boundaries of the mixing zones are defined as follows:

> Chronic mixing zone shall (1) not extend in any horizontal direction from the discharge port(s) for a distance greater than two hundred feet plus the depth of water over the discharge port(s) as measured during mean lower low water; and (2) not occupy greater than twenty-five percent of the width of the water body as measured during mean lower low water.
>
> Acute mixing zones shall not extend beyond ten percent of the distance established for chronic mixing zones, as measured independently from the discharge port.

The dilution factors, of effluent to receiving water that occur within these zones, have been determined at the critical condition by the use of CORMIX1. The critical conditions are based on the design influent flows described in Section 5 of the Engineering Report for the wastewater treatment plant upgrade, dated December 1996. The dilution factors for aquatic life have been determined to be (see Appendix C): Acute = 29; Chronic = 58.

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The ambient background data used for this permit includes the following from Ecology Monitoring Stations GYS 015 and GYS 016:

Parameter	Value used

Velocity	30 cm/sec at 90%; 80 cm/sec at 50%
Depth	5.00 feet
Radius of Mixing Zone	205.0 feet
Temperature	6.5 ^{o}C to 19.0 ^{o}C
pH (high)	6.90 to 8.50
Dissolved Oxygen	6.2 to 10.9 mg/L
Total Ammonia-N	0.118 mg/L
Fecal Coliform	110/100 mL
Conductivity	83.60 mho/cm
Salinity	34.20 ppt
Turbidity	27.9 NTU

The effluent from the treatment facility is discharged into the storage lagoon prior to discharge on the out-going tides. The discharge is controlled by a motorized valve that opens at the beginning of an out-going tide (when the currents begin to reverse). The valve then closes, at least one hour prior to the reverse of currents on an in-coming tidal cycle, to prevent re-mixing of effluent (reflux).

BOD_5--This discharge with technology-based limitations results in a small amount of BOD loading relative to the large amount of dilution occurring in the receiving water at critical conditions. Technology-based limitations will be protective of dissolved oxygen criteria in the receiving water.

Temperature -- Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, no effluent limitation for temperature was placed in the proposed permit.

pH --Because of the high buffering capacity of marine water, compliance with the technology-based limits of 6 to 9 will assure compliance with the Water Quality Standards for Surface Waters.

Fecal coliform --The numbers of fecal coliform were modeled by simple mixing analysis using the technology-based limit of 200 organisms per 100 ml and a dilution factor of 58.

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters with the technology-based limit. Therefore, the technology-based effluent limitation for fecal coliform bacteria was placed in the proposed permit.

Toxic Pollutants -- Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

Since the new WWTP utilizes UV disinfection, the only toxic pollutant of concern in the discharge is ammonia. Therefore, ammonia (as N) shall be monitored for the first two years of operation of the new WWTP. After the two years of data are collected, a reasonable potential shall be completed to determine if effluent limitations are required in the permit

The determination of the reasonable potential for ammonia to exceed the water quality criteria will be evaluated with procedures given in EPA, 1991 at the critical condition. The critical condition in this case occurs between May through October. The parameters used in the critical condition modeling are as follows: receiving water ammonia 0.12 mg/L, pH 8.3, temperature 19.0 ^{o}C, salinity 15.36 ppt, acute dilution factor 9, and chronic dilution factor 58.

INTERIM EFFLUENT LIMITATIONS

The interim limits in this permit are based on the data submitted in the discharge monitoring reports (DMRs). The reporting period for the last two years (July 1996 through June 1998) was utilized for this analysis. WAC 173-221-030(11) defines the parameters for the determination of the interim effluent limitations. These limitations are based on the "effluent concentrations consistently achievable through proper operation and maintenance" of the facility. The analysis for a given parameter uses the 95th percentile value for the 35-day average effluent quality achieved by a wastewater facility in a period of at least 24 consecutive months. The effluent CBOD5 and TSS for the reporting period was determined to be 19 mg/L at 86 percent removal for CBOD5 and 35 mg/L at 84 percent removal for TSS. Therefore, the Interim Effluent Limitations will be set at 25 mg/L at 85 percent for CBOD5 and 35 mg/L at 80 percent for TSS.

FINAL EFFLUENT LIMITATIONS

The limits in this permit are based in part on information received in the engineering report and NPDES permit application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the state of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

Toxicity caused by unidentified pollutants is not expected in the effluent from this discharge as determined by the screening criteria given in Chapter 173-205 WAC. Therefore, no whole effluent toxicity testing is required in this permit. The Department may require effluent toxicity testing in the future if it receives information that toxicity may be present in this effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard". The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge does not contain chemicals of concern based on existing data or knowledge. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Sludge monitoring is required by the current state and local solid waste management program and also by EPA under 40 CFR 503.

The monitoring schedule is detailed in the proposed permit under Condition S.2.A and B. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of the Department's *Permit Writer's Manual* (July 1994) for the Ocean Shores Wastewater Treatment Plan.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.* The laboratory at this facility is accredited for: Biochemical Oxygen Demand (BOD), Carbonaceous BOD (CBOD), Chlorine Total Residual, pH, Solids Total Suspended, and Fecal Coliforms.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4. to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4. restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains condition S.5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required in permit condition S7. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and state Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503. The disposal of other solid waste is under the jurisdiction of the Grays Harbor County Health Department.

PRETREATMENT

An industrial user survey may be required to determine the extent of compliance of all industrial users of the sanitary sewer and wastewater treatment facility with federal pretreatment regulations (40 CFR Part 403 and Sections 307(b) and 308 of the Clean Water Act), with state regulations (Chapter 90.48 RCW and Chapter 173-216 WAC), and with local ordinances.

FEDERAL AND STATE PRETREATMENT PROGRAM REQUIREMENTS

Under the terms of the addendum to the "Memorandum of Understanding between Washington Department of Ecology and the United States Environmental Protection Agency, Region 10" (1986), the Department has been delegated authority to administer the Pretreatment Program (i.e. act as the Approval Authority for oversight of delegated Publicly Owned Treatment Works (POTWs))**.** Under this delegation of authority, the Department has exercised the option of issuing wastewater discharge permits for significant industrial users discharging to POTWs which have not been delegated authority to issue wastewater discharge permits.

There are a number of functions required by the Pretreatment Program which the Department is delegating to such POTWs because they are in a better position to implement the requirements (e.g. tracking the number and general nature of industrial dischargers to the sewerage system). The requirements for a Pretreatment Program are contained in Title 40, part 403 of the Code of Federal Regulations. Under the requirements of the Pretreatment Program (40 CFR 403.8(f)(1)(iii)), the Department is required to approve, condition, or deny new discharges or a significant increase in the discharge for existing significant industrial users (SIUs) (40 CFR 403.8 (f)(1)(i)).

The Department is responsible for issuing State Waste Discharge Permits to SIUs and other industrial users of the Permittee's sewer system. Industrial dischargers must obtain these permits from the Department prior to the Permittee accepting the discharge (WAC 173-216-110(5)) (Industries discharging wastewater that is similar in character to domestic wastewater are not required to obtain a permit. Such dischargers should contact the Department to determine if a permit is required.). Industrial dischargers need to apply for a State Waste Discharge Permit sixty days prior to commencing discharge. The conditions contained in the permits will include any applicable conditions for categorical discharges, loading limitations included in contracts with the POTW, and other conditions necessary to assure compliance with state water quality standards and biosolids standards.

The Department requires this POTW to fulfill some of the functions required for the Pretreatment Program in the NPDES permit (e.g. tracking the number and general nature of industrial dischargers to the sewage system). The POTW's NPDES permit will require that all SIUs currently discharging to the POTW be identified and notified of the requirement to apply for a wastewater discharge permit from the Department. None of the obligations imposed on the POTW relieve an industrial or commercial discharger of its primary responsibility for obtaining a wastewater discharge permit (if required), including submittal of engineering reports prior to construction or modification of facilities (40 CFR 403.12(j) and WAC 173-216-070 and WAC 173-240-110, et seq.).

WASTEWATER PERMIT REQUIRED

RCW 90.48 and WAC 173-216-040 require SIUs to obtain a permit prior to discharge of industrial waste to the Permittee's sewerage system. This provision prohibits the POTW from accepting industrial wastewater from any such dischargers without authorization from the Department.

REQUIREMENTS FOR ROUTINE IDENTIFICATION AND REPORTING OF INDUSTRIAL USERS

The NPDES permit requires non-delegated POTWs to " take continuous, routine measures to identify all existing, new, and proposed SIUs and potential significant industrial users (PSIUs) discharging to the Permittee's sewerage system". Examples of such routine measures include regular review of business tax licenses for existing businesses and review of water billing records and existing connection authorization records. System maintenance personnel can also be diligent during performance of their jobs in identifying and reporting as-yet-unidentified industrial dischargers. Local newspapers, telephone directories, and word-of-mouth can also be important sources of information regarding new or existing discharges. The POTW is required to notify an industrial discharger, in writing, of their responsibilities regarding application for a state waste discharge permit and to send a copy of the written notification to the Department. The Department will then take steps to solicit a state waste discharge permit application.

DUTY TO ENFORCE DISCHARGE PROHIBITIONS

This provision prohibits the POTW from authorizing or permitting an industrial discharger to discharge certain types of waste into the sanitary sewer. The first portion of the provision prohibits acceptance of pollutants which cause pass through or interference. The definitions of pass through and interference are in Appendix B of the fact sheet..

The second portion of this provision prohibits the POTW from accepting certain specific types of wastes, namely those which are explosive, flammable, excessively acidic, basic, otherwise corrosive, or obstructive to the system. In addition wastes with excessive BOD, petroleum-based oils, or which result in toxic gases are prohibited to be discharged. The regulatory basis for these prohibitions is 40 CFR Part 403, with the exception of the pH provisions which are based on WAC 173-216-060.

The third portion of this provision prohibits certain types of discharges unless the POTW receives prior authorization from the Department. The discharges include cooling water in significant volumes,

stormwater and other direct inflow sources, and wastewaters significantly affecting system hydraulic loading, which do not require treatment.

OUTFALL EVALUATION

Proposed permit condition S.8. requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers and to determine if sediment is accumulating in the vicinity of the outfall.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7 relates to permit renewal. Condition G8 prohibits the reintroduction of removed substances back into the effluent. Condition G9 states that the Department will modify or revoke and reissue the permit to conform to more stringent toxic effluent standards or prohibitions. Condition G10 incorporates by reference all other requirements of 40 CFR 122.41 and 122.42. Condition G11 notifies the Permittee that additional monitoring requirements may be established by the Department. Condition G12 requires the payment of permit fees. Condition G13 describes the penalties for violating permit conditions.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Metcalf and Eddy.

1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Water Pollution Control Federation.

1976. Chlorination of Wastewater.

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) in the *Aberdeen Daily World* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6279, or by writing to the address listed above.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of prevention, control, and treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User-- A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the state of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington state permit writers are joint NPDES/State permits issued under both state and federal laws.

Pass through -- A discharge which exits the POTW into waters of the ~~—s~~state in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of state water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;

b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;

2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

   Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

   *The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C-- MAPS AND DRAWINGS

APPENDIX D--RESPONSE TO COMMENTS